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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Evangelisti et al.  
Serial No.: 09/830,245  
Filing Date: July 9, 2001  
Title: Vacuum Packaging Machine

Docket No: 42837-01  
Group Art Unit: 3728  
Examiner: Stashick, Anthony D.

BRIEF ON APPEAL

Commissioner for Patents  
Washington, D.C. 20231

RECEIVED

OCT 31 2003

TECHNOLOGY CENTER R3700

Dear Sir:

This Brief is being filed in triplicate in support of a Notice of Appeal filed August 29, 2003, in which the Applicant appealed from the rejection of claims 22 to 42 in the Final Office Action dated August 12, 2003.

The Commissioner is authorized to charge the fee of \$330 for filing a Brief on Appeal, to Deposit Account No. 07-1765.

The Commissioner is authorized to charge any additional fees that may be required or credit any overpayment to Deposit Account No. 07-1765.

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10-27-03

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Respectfully submitted,

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Real Party in Interest

The real party in interest in this patent application is Cryovac, Inc.

### Related Appeals and Interferences

There are no other appeals or interferences known to Applicants, the Applicants' legal representative, or assignee that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

### Status of Claims

The claims now on Appeal are claims 22 to 42.

A copy of the claims presently on Appeal appears in the Appendix.

### Status of Amendments

The claims now on Appeal are claims 22 to 42.

By applicant's response of April 23, 2001, claims 1 to 21 were canceled, and claims 22 to 42 were added.

By applicant's response of December 9, 2001, claims 22 and 42 were amended.

Claims 22 to 42 were rejected in the Final Office Action dated February 26, 2003.

An amendment was filed with an RCE on July 1, 2003, amending claim 22.

Claims 22 to 42 were rejected in the Final Office Action dated August 12, 2003.

A copy of the claims presently on Appeal appears in the Appendix.

## Summary of the Invention

(References to the specification by page and line numbers are shown in parentheses.)

Vacuum packaging machines of a known type comprise a vacuum chamber arranged to receive at least one unsealed product package and operable to perform a vacuum sealing operation on the at least one product package. Typically, the product packages are products such as food stuff arranged in a bag formed by a heat shrinkable film. After loading and closing the vacuum chamber, the vacuum sealing operation normally comprises vacuumization, sealing the mouth of the vacuumized bags, and reintroducing air into the chamber. Then the chamber is opened and the vacuum chamber is unloaded (page 1, lines 6 to 13).

The vacuumization step typically takes at least 20 to 30 seconds which is mostly wasted time in the overall packaging process. During this time, the only step which can be taken is to prepare the next product packages for loading into the vacuum chamber, for example by conveying them onto an in-feed conveyor. Accordingly, the vacuum packing machine causes a bottle-neck in the overall packaging process (page 1, lines 15 to 19).

The present invention provides a vacuum packaging machine for performing a vacuum sealing operation on product packages, comprising a vertical stack of vacuum chambers each arranged to receive at least one unsealed product package and operable to perform an independent vacuum sealing operation on the at least one product package. The provision of more than one vacuum chamber in the vacuum packaging machine allows respective vacuum chambers to perform a vacuum sealing operation while another vacuum chamber is being loaded and/or unloaded. Thus, the machine thus minimizes the wasted time in the vacuum packaging process. This in turn leads to increased productivity and through-put (page 1, lines 25 to 30).

## Issues

The issues presented for review (per the Final Office Action, mailed August 12, 2003) are as follows:

1. Are claims 22 to 42 unpatentable under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the invention.
2. Are claims 22 to 26, 32, 38 and 39 unpatentable under 35 U.S.C. §102 (b) as being anticipated by Furukawa (US Patent No. 4,869,050)?
3. Are claims 30, 31, and 40 to 42 unpatentable under §103(a) over Furukawa (U.S. Patent No. 4,869,050) as applied to claims 22 and 26, in view of Mugnai (US 4,471,599)?
4. Are claims 27 to 29, and claims 33 to 37 unpatentable under §103(a) over Furukawa (U.S. Patent No. 4,869,050) as applied to claims 26 and 32 above, in view of Bonnet (US 6,227,377)?



### Grouping of Claims

Under 37 CFR 1.192(c)(7), Applicants state that the claims stand or fall together.

## Argument

1. Claims 22 to 42 are patentable under 35 U.S.C. § 112, first paragraph, as containing subject matter which is in fact described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the invention.

At page 2, the Office Action takes the position that applicants' addition of the limitation "permanently" (see the phrase "comprising a *permanently* vertical stack of vacuum chambers") is new matter unsupported by the specification. Applicants respectfully traverse this rejection.

It is true that the phrase "permanently" does not appear *ipsissimus verbis* in the specification. However, applicants respectfully submit that the concept of a permanently vertical stack of vacuum chambers is amply demonstrated in the specification and the accompanying drawings. Referring e.g. to page 4 of the specification, at lines 11 through 16, four drawing figures are briefly described, showing a first, second, third, and fourth arrangement of the vacuum packaging machine of the invention. A more detailed description for one of these, the first arrangement, is disclosed at page 7, line 25 through page 8, line 25. This portion of the specification describes a possible cycle for the arrangement of the vacuum packaging machine 1 illustrated in Fig 2.

As an arbitrary starting point within the cycle, one takes the point at which the vacuum sealing operation in the lower vacuum chamber 4a has just finished. At this time the vacuum sealing operation in the upper vacuum chamber 4b is underway. The lower vacuum chamber 4a is opened. Next, the fixed conveyors 10, 11, the in-feed and out-feed conveyors 8, 9 and the lower chamber conveyor 5a are simultaneously operated (i) to load lower vacuum chamber 4a with new unsealed product packages from the in-feed conveyor 8, (ii) to unload the lower vacuum chamber 4a onto the out-feed conveyor 9, and (iii) to supply new unsealed product packages 2 onto the in-feed conveyor 8. The lower vacuum chamber 4a is then closed for commencement of the vacuum sealing operation, that is vacuumization of the chamber 4a and sealing of the product packages 2 by sealing bar 12.

During the vacuum sealing operation in the lower vacuum chamber 4a, loading and unloading of the upper vacuum chamber 5 is performed. The out-feed conveyor 9 is operated briefly to clear sealed products off it. Then the in-feed and out-feed conveyors

8, 9 are raised to the upper vacuum chamber 4b and when the vacuum sealing operation in the upper vacuum chamber 4b has finished, the upper vacuum chamber 4b is opened. Simultaneous operation of the in-feed and out-feed conveyors 8,9 and the upper chamber conveyor 5b loads and unloads the upper vacuum chamber 4b.

Subsequently, the upper vacuum chamber 4b is closed and the vacuum sealing operation in the upper vacuum chamber 4b is commenced. At the same time, the in-feed and out-feed conveyors 8, 9 are operated to load and unload the lower vacuum chamber 4a. Thus, the in-feed and out-feed conveyors 8,9 are lowered and then the in-feed conveyor 8 is operated simultaneously with the fixed conveyor 10 to fill the in-feed conveyor with new product packages 2 from in-feed conveyor 8 while the sealed packages move onto the out-feed conveyor 9.

The cycle then repeats.

The specification at page 8, line 25 indicates that the just described cycle is illustrative of the cycle for the other arrangements as well, i.e. for each of the second, third, and fourth arrangements referred to on page 4, and described in more detail on:

- page 8, line 31 to page 9, line 8 (the second arrangement involving three vertically stacked vacuum chambers 4a, 4b, and 4c),
- page 9, lines 9 to 16 (the third arrangement involving three vertically stacked vacuum chambers 4a, 4b, and 4c), and
- page 9, lines 17 to 20 (the fourth arrangement involving two separated pairs of vertically stacked vacuum chambers 4a, 4b, and 4c, 4d)

It is clear from a total review of the detailed description of the first arrangement, and of the alternative arrangements, and the accompanying drawings, that the vacuum chambers are in a vertical arrangement during an entire machine cycle, for every machine cycle. The vacuum chambers are therefore implicitly and necessarily in a *permanently* vertical arrangement.

2. Claims 22 to 26, 32, 38 and 39 are patentable under 35 U.S.C. §102 (b) and not anticipated by Furukawa (US Patent No. 4,869,050).

Furukawa does not disclose a permanently vertical stack of vacuum chambers.

In Furukawa, what is described is a rotor, rotatable in a vertical plane around a horizontal axis, having suspended a plurality of vacuum chambers to the rotor arms. It is true that if you have an even number of chambers suspended on the rotor edge, you

might have one instant where one of the rotating vacuum chambers is "over" another one (see for instance in the figure on the cover page of the Furukawa patent, the chambers on the right top and right bottom side) and this configuration may be viewed as a configuration comprising a vertical stack of some of the vacuum chambers.

However, as the rotor moves, these vacuum chambers will no longer be "vertically stacked". Thus Furukawa does not describe a packaging machine comprising a *permanently* vertical stack of vacuum chambers.

3. Claims 30, 31, and 40 to 42 are patentable under §103(a) over Furukawa (U.S. Patent No. 4,869,050) as applied to claims 22 and 26, in view of Mugnai (US 4,471,599).

Applicants rely on the remarks above with respect to Furukawa. Also, Furukawa does not teach, or suggest, stacking vacuum chambers vertically and fitting the stack with conveyors where the vertical movement of either the conveyors or the vacuum chambers optimizes the overall process, thereby reducing the waste time discussed in the specification.

In Mugnai, a conveyor internal to the vacuum chamber is present, but Mugnai does not suggest the possibility of combining a number of vacuum chambers and particularly of permanently vertically stacking them.

4. Claims 27 to 29, and claims 33 to 37 are patentable under §103(a) over Furukawa (U.S. Patent No. 4,869,050) as applied to claims 26 and 32 above, in view of Bonnet (US 6,227,377).

Applicants rely on the remarks above with respect to Furukawa. Also, Bonnet, which has been combined with Furukawa '050 to show the multiple conveyors and the vertical movement thereof, does not suggest the use of multiple conveyors and mainly does not suggest the use of conveyors that vertically move. Neither Bonnet nor Furukawa teach a packaging machine comprising a *permanently* vertical stack of vacuum chambers.

Applicants respectfully ask the Board to reverse the finding of the Final Action, and to allow claims 22 to 42.

## Appendix

22. A vacuum packaging machine for performing a vacuum sealing operation on product packages, comprising a permanently vertical stack of vacuum chambers each arranged to receive at least one unsealed product package and operable to perform an independent vacuum sealing operation on the at least one product package.

23. A vacuum packaging machine according to claim 22, further comprising a conveyor arrangement operable to load and unload a selective vacuum chamber with the at least one product package, the machine being operable to operate respective vacuum chambers to perform the vacuum sealing operation while the conveyor arrangement is operated to load and unload another vacuum chamber.

24. A vacuum packaging machine according to claim 23, wherein the machine is operable to operate the conveyor arrangement to load and unload the vacuum chambers in a cyclical sequence and synchronously to operate the respective vacuum chambers to perform the vacuum sealing operation on the at least one product packages after loading.

25. A vacuum packaging machine according to claim 24, wherein the number of vacuum chambers is sufficient relative to the duration of the vacuum sealing operation to allow the conveyor arrangement to operate continuously.

26. A vacuum packaging machine according to claim 23, wherein the conveyor arrangement includes at least one in-feed conveyor operable to load a selected vacuum chamber with the at least one product package.

27. A vacuum packaging machine according to claim 26, wherein the at least one in-feed conveyor is vertically movable to select the vacuum chamber to be loaded.

28. A vacuum packaging machine according to claim 27, wherein the conveyor arrangement includes a plurality of in-feed conveyors which are vertically movable together to select the vacuum chamber to be loaded.

29. A vacuum packaging machine according to claim 28, wherein the vacuum chambers have a regular spacing and the in-feed conveyors have a relative spacing equal to the spacing between the vacuum chambers.

30. A vacuum packaging machine according to claim 26, further comprising an internal conveyor in each vacuum chamber extending from the at least one in-feed conveyor.

31. A vacuum packaging machine according to claim 30, wherein the vacuum chambers each have a sealing bar for sealing the at least one product package extending along the internal conveyor.

32. A vacuum packaging machine according to claim 26, wherein the conveyor arrangement includes at least one out-feed conveyor operable to unload a selected vacuum chamber with the at least one product package.

33. A vacuum packaging machine according to claim 32, wherein the at least one out-feed conveyor is vertically movable to select the vacuum chamber to be unloaded.

34. A vacuum packaging machine according to claim 33, wherein the conveyor arrangement includes a plurality of out-feed conveyors which are vertically movable together to select the vacuum chamber to be unloaded.

35. A vacuum packaging machine according to claim 34, wherein the vacuum chambers have a regular spacing and the out-feed conveyors have a relative spacing equal to the spacing between the vacuum chambers.

36. A vacuum packaging machine according to claim 34, wherein the out-feed conveyors have a modular construction allowing out-feed conveyors to be added and removed.

37. A vacuum packaging machine according to claim 28, wherein the in-feed conveyors have a modular construction allowing in-feed conveyors to be added and removed.

38. A vacuum packaging machine according to claim 22, wherein the vacuum chambers have a modular construction allowing vacuum chambers to be added to and removed from the vertical stack.

39. A vacuum packaging machine according to claim 23, wherein the plurality of vacuum chambers are movable together relative to the conveyor arrangement to select the vacuum chamber to be loaded and unloaded.

40. A vacuum packaging machine according to claim 22, wherein the vacuum chambers each have a sealing bar arranged along a side of the respective vacuum chamber for sealing the at least one product packages.

41. A vacuum packaging machine according to claim 22, wherein each vacuum chamber comprises at least two parts which are relatively vertically movable to open and close the vacuum chamber.

42. A vacuum packaging machine according to claim 41, wherein each vacuum chamber comprises a base and a cover disposed vertically above the base, wherein the cover is fixed and the base is vertically movable to open and close the vacuum chamber.